spreading towards north and east and was found in southwestern parts of Germany in 2012. Female *D. suzukii* possess a distinctive serrated ovipositor that allows them to lay eggs successfully into healthy and ripening fruits as opposed to most of drosophilids that only infest overripe, fallen or rotting fruits. Therefore this species is able to infest small and stone fruits which are grown for harvest. After ovipositition the larval stages cause a high risk to various marketable crops, especially soft or thin-skinned fruits which are rapidly collapsing through larval feeding. In this study the composition and seasonal occurrence of native Drosophilidae species was explored by adult trapping in habitats which may be suitable for *D. suzukii* as a potential new invader. After detection of *D. suzukii* at nearly all trap locations in South-Hessia, the infestation of berries and the development of deposited eggs were also explored. The results revealed differences in species composition between rural and urban areas and also effects of surrounding habitat conditions. *D. suzukii* invaded most of the locations, but only late in the season from mid of August. It seems that the invasive fruit pest *D. suzukii* could occupy several ecological niches and build stable populations in South-Hessia. After successful baiting trials in the field, laboratory rearings of *D. melanogaster* and *D. subobscura* were established for future investigations. Furthermore, the occurrence and phenology of native parasitoids of Drosophilidae were monitored to estimate their potential association with *D. suzukii*. Individuals of the superfamilies Chalcidoidea, Ichneumonoidea and Cynipoidea were trapped. They included specimens of *Leptopilina heterotoma* (Thomson) and *Asobara* (Braconidae: Alysiinae), which are known to use *Drosophilida* larvae as hosts. The knowledge of the species composition of native Drosophilidae communities and their associated parasitoids could be used for an estimation of the potential environmental and economic risk caused by *D. suzukii* and for outlining prospective biological control strategies.

Test method of biocontrol agents on fungus gnats (Sciaridae)

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The test method is based on the rearing of the fungus gnat *Bradysia difformis* (Frey, 1948) in a moist coconut fiber substrate with the compost fungus *Alternaria alternata* (Fr.) Kreissler, which is cultivated on oat flakes. *B. difformis* is an ideal test organism for growing media due to myco – and phytophagous behavior. The robust test method is suitable for studies: (1) general biological soil activity, (2) for assessing growing media on fungus gnat infestation, (3) on the effects of pesticides on fungus gnats, (4) the effect of biocontrol organisms on fungus gnats. The advantage is the homogeneous age structure of fungus gnats in the substrate. By shifting of experimental parameters over time, the different developmental stages of fungus gnats can be tested. To demonstrate the efficacy of *Bacillus thuringiensis* var. *israelensis* (*B.t.i.*) two independent tests in a climate chamber (22°C, 60 % rel.

humidity, 12h day/night) were conducted. The rearing substrate consisted of 500 g of dry coconut fiber substrate, inoculated with 3000 ml of a conidia suspension of the fungus (2 million conidia/500 ml of water). For the *B.t.i*. variant, 1 g BioMükk® (*B.t.i.*) was added to the substrate. The substrate was mixed with 100 g of oat flakes as food source for the compost fungus. Plastic vessels of 500 ml were filled with 360 ml of the rearing substrate and closed with a perforated plastic cover. After 7 days, six plastic vessels with *B.t.i.* and six plastic vessels without *B.t.i.* (untreated control) were randomized placed within a flight cage with fungus gnats and offered for egg depositing for 24 h. Thereafter, in the covered vessels yellow sticky traps were placed to trap the remaining fungus gnats. After 7 days, the sticky traps were replaced by new yellow sticky traps to catch the new fungus gnats after hatching. To estimate the efficacy of the B.t.i. treatment in comparison to the control and to validate the test procedure, the emergence of fungus gnats in the two variants of *B.t.i.* and untreated control was compared. Seven days after application of *B.t.i.* an efficacy of 71 % (test 1) and 92 % (test 2) was recorded measured as reduction of the number of hatched fungus gnats.

Is´s a hard world – progress in commercial application of *H. bacteriophora* against the invasive Corn Rootworm?

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The maize pest insect Western Corn Rootworm (WCR), *Diabrotica v.virgifera* causes severe damage in the Balkan countries, as well as in Austria and Italy. It has also entered into Germany, but root damage has not yet been reported. Due to its status as quarantine pest, however, maize grown in monoculture needs to be treated to avoid further spread of this invasive pest. WCR larvae and pupae are highly susceptible to entomopathogenic nematodes. The biotechnology company E-nema GmbH has launched the product dianem®, based on the nematode *Heterorhabditis bacteriophora* for control of larvae and pupae of the corn rootworm in 2012. Results of eight years of field trials in Hungary, Italy and Austria have provided evidence for the high efficacy of dianem®. The development of the nematode inside the insect larva is documented on the company´s webpage under the link “services”. Nematodes are applied in liquid suspension with the drilling machines. Adapted application technology helps to position the nematodes in direct vicinity of the seeds. Field trials in Hungary, Austria and Germany revealed that the dauer juveniles of the nematodes well persist in the soil until the pest larvae hatch and attack the roots. No significant differences were recorded in pest control (reduction of adults per plant) and prevention of root damage between applications at seeding or at occurrence of the larvae in June. dianem® was tested at dauer juvenile density of $1 – 5 \times 10^9$ ha^{-1}. No major differences were recorded, why dianem® is recommended at 2×10^9 nematodes ha^{-1}. In comparison with pyrethroide granules or neonicotinoide seed treatment, nematodes reach comparable or better control of larvae and pupae. Often control of adult emergence surpassed results recorded for chemical treatments. Although the control results are satisfying and the application technology is easily